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09/255,144	02/22/1999	HIDEO KAWAHARA	1232-4510	8039

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EXAMINER
HANNETT, JAMES M

ART UNIT	PAPER NUMBER
2612	

DATE MAILED: 05/21/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/255,144	Applicant(s) KAWAHARA, HIDEO	
	Examiner James M Hannett	Art Unit 2612	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____ .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-77* is/are pending in the application.

4a) Of the above claim(s) *8 and 22-77* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-7, and 9-21* is/are rejected.

7)☒ Claim(s) *2, 5, 6, and 7* is/are objected to.

8)☒ Claim(s) *8 and 22-77* are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *22 February 0199* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☒ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

Election/Restrictions

1: Applicant's election with traverse of Claims 1-7 and 9-21 in Paper No. 6 is acknowledged. The traversal is on the ground(s) that the two species are not patentably distinct because they are modifications of one another and that undue diverse searching would not be required. This is not found persuasive because although the searches for the two species may appear to be overlapping there is no reason to believe that the two searches would be co-extensive.

The requirement is still deemed proper and is therefore made FINAL.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2: Claims 1, 3, 4, and 9-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over USPN 5,502,484 Okada in view of USPN 5,210,563 Hamada et al in further view of USPN 4,992,855 Takei.

3: As for Claim 1, Okada depicts in Figure 1 an image sensing apparatus for electronically applying shake correction to sensed image data, and outputting corrected image data, comprising: shake detection means (21A and 21B) for detecting a shake; Column 5, Lines 62-66 The shake detection means is viewed as the Pitch and Yaw angular velocity sensors. Okada teaches the use of sampling means in the form of an A/D converter (23a and 23B). Correction

data calculation means (20) for calculating a shake correction data used in the shake correction by a predetermined calculation of the shake information signal selected by the selection means, and correction means for applying the shake correction to the sensed image data in accordance with the obtained shake correction data (20). Column 6, Lines 6-15 and Column 6, Lines 55-60.

Okada teaches the method of acquiring sampled data from the angular velocity sensors to correct for the movement of the camera in the image. However, Okada does not teach when the samples will be taken or sampling shake information detected by the shake detection means at a plurality of sampling timings within one field period of the image sensing apparatus (20). Or that the selecting means for selecting a shake information signal at one of a plurality of sampling timings, which corresponds to a drive condition of image sensing means at the time of image sensing.

Hamada et al teaches in Figure 11B and on Columns 10, Lines 54-67 and Column11, Lines 1-9 that it is advantageous to collect data to correct for the movement of the camera during an exposure period. Furthermore, Hamada et al teaches that data can be extracted multiple times during an exposure period in accordance with the shutter speed. Column 11, Lines 7-9. This method is advantageous because it gives a more accurate calculation for the required motion correction due to the fact that the correction value is calculated using data during the actual exposure.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to acquire the sampled shake information used to correct for shake in the camera of Okada a multiple number of times during an exposure in accordance with the current

shutter speed as taught be Hamada et al in order to give a more accurate calculation for the required motion correction.

Okada in view of Hamada et al does not teach that the multiple samples are taken during one field period of the image sensing apparatus (20), However Hamada et al states that multiple samples are taken during one exposure period.

Takei et al depicts in Figure 6 and on Column 1, Lines 26-35 and Column 8, Lines 3-11 that it is advantageous to have the exposure period be less than one field period to enable a video tape recorder to reproduce a clear picture without shaking of the images from scenes of rapidly moving objects recorded on the tape.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to make the exposure time of Okada in view of Hamada et al less than one field period to enable a video tape recorder to reproduce a clear picture without shaking of the images from scenes of rapidly moving objects recorded on the tape. Therefore, because one exposure period is entirely within one field period and Hamada et al teaches sampling the shake information a multiple number of times during one exposure period. Okada in view of Hamada et al in further view of Takei et al teaches that a multiple number of samples are taken during one field period.

4: As for Claim 3, Hamada et al depicts in Figure 14A and teaches on Column 12. Lines 36-48 that the sampling timing selected by the selection means corresponds to a substantially central time in a storage time period of the image sensing means. Hamada et al teaches that the storage time is the interval when the shutter is open. It is clear from Figure 14A that the sampling time which corresponds to the line (M) is substantially in the center of the exposure period.

5: In regards to Claim 4,Okada teaches that the shake detection means comprises an angular velocity sensor (21A and 21B) for detecting shake angular displacements in two orthogonal directions. Column 5, Lines 62-66 The shake detection means is viewed as the Pitch and Yaw angular velocity sensors. Therefore, detect angular displacements in two orthogonal directions.

6: In regards to Claim 9, Hamada et al further teaches on Column 11, Lines 7-9 that the drive condition includes a shutter speed. Hamada teaches that the samples are extracted a multiple number of times depending on the exposure time which is viewed as the shutter speed.

7: As for Claim 10, Okada depicts in Figure 1 an image sensing apparatus for electronically applying shake correction to sensed image data, and outputting corrected image data, comprising: shake detection means (21A and 21B) for detecting a shake; Column 5, Lines 62-66 The shake detection means is viewed as the Pitch and Yaw angular velocity sensors. Okada teaches the use of sampling means in the form of an A/D converter (23a and 23B). Correction data calculation means (20) for calculating a shake correction data used in the shake correction by a predetermined calculation of the shake information signal selected by the selection means, and correction means for applying the shake correction to the sensed image data in accordance with the obtained shake correction data (20). Column 6, Lines 6-15 and Column 6, Lines 55-60. Okada teaches means for outputting the obtained shake correction data to the external image sensing apparatus. The external image sensing apparatus is viewed as the camera and the data is output from the hand shake correction controller (20).

Okada teaches the method of acquiring sampled data from the angular velocity sensors to correct for the movement of the camera in the image. However, Okada does not teach when the samples will be taken or sampling shake information detected by the shake detection means at a

plurality of sampling timings within one field period of the image sensing apparatus (20). Or that the selecting means for selecting a shake information signal at one of a plurality of sampling timings, which corresponds to a drive condition of image sensing means at the time of image sensing.

Hamada et al teaches in Figure 11B and on Columns 10, Lines 54-67 and Column11, Lines 1-9 that it is advantageous to collect data to correct for the movement of the camera during an exposure period. Furthermore, Hamada et al teaches that data can be extracted multiple times during an exposure period in accordance with the shutter speed. Column 11, Lines 7-9. This method is advantageous because it gives a more accurate calculation for the required motion correction due to the fact that the correction value is calculated using data during the actual exposure.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to acquire the sampled shake information used to correct for shake in the camera of Okada a multiple number of times during an exposure in accordance with the current shutter speed as taught be Hamada et al in order to give a more accurate calculation for the required motion correction.

Okada in view of Hamada et al does not teach that the multiple samples are taken during one field period of the image sensing apparatus (20), However Hamada et al states that multiple samples are taken during one exposure period.

Takei et al depicts in Figure 6 and on Column 1, Lines 26-35 and Column 8, Lines 3-11 that it is advantageous to have the exposure period be less than one field period to enable a video

tape recorder to reproduce a clear picture without shaking of the images from scenes of rapidly moving objects recorded on the tape.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to make the exposure time of Okada in view of Hamada et al less than one field period to enable a video tape recorder to reproduce a clear picture without shaking of the images from scenes of rapidly moving objects recorded on the tape. Therefore, because one exposure period is entirely within one field period and Hamada et al teaches sampling the shake information a multiple number of times during one exposure period. Okada in view of Hamada et al in further view of Takei et al teaches that a multiple number of samples are taken during one field period.

8: In regards to Claim 11, Furthermore, Okada in view of Hamada et al teaches that the sampling means samples the shake information a plurality of number of times within a predetermined period (the predetermined period being the exposure period, the correction data calculation means calculates the shake correction data of the plurality of pieces of shake information, and the control means selects the shake correction data to be supplied to the correction means from the plurality of shake correction data in accordance with the drive condition (the drive condition being the exposure time or the shutter speed). Hamada et al teaches that data can be extracted multiple times during an exposure period in accordance with the shutter speed. Column 11, Lines 7-9.

9: As for Claim 12, Hamada et al further teaches the sampling means varies the sampling timing in accordance with a change in storage time period (exposure time) of the image sensing apparatus. Hamada et al further teaches on Column 11, Lines 7-9 that the drive condition

includes a shutter speed. Hamada teaches that the samples are extracted a multiple number of times depending on the exposure time which is viewed as the shutter speed.

10: In regards to Claim 13, Hamada et al depicts in Figure 14A and teaches on Column 12, Lines 36-48 that the sampling means samples an output from the shake detection means at a timing corresponding to a substantially central time of the storage time period of the image sensing apparatus. Hamada et al teaches that the storage time is the interval when the shutter is open. It is clear from Figure 14A that the sampling time which corresponds to the line (M) is substantially in the center of the exposure period.

11: As for Claim 14, Claim 14 is rejected for reasons discussed related to Claim 1.

12: In regards to Claim 15, Furthermore, Okada in view of Hamada et al teaches that the sampling means samples the shake information a plurality of number of times within a predetermined period (the predetermined period being the exposure period, the correction data calculation means calculates the shake correction data of the plurality of pieces of shake information, and the control means selects the shake correction data to be supplied to the correction means from the plurality of shake correction data in accordance with the drive condition (the drive condition being the exposure time or the shutter speed). Hamada et al teaches that data can be extracted multiple times during an exposure period in accordance with the shutter speed. Column 11, Lines 7-9.

13: As for Claim 16, Hamada et al depicts in Figure 14A and teaches on Column 12, Lines 36-48 that the sampling means samples the shake information used for calculating the shake correction data to be supplied to the correction means at a timing corresponding to a substantially central time of a storage time period of the image sensing means. Hamada et al teaches that the

storage time is the interval when the shutter is open. It is clear from Figure 14A that the sampling time which corresponds to the line (M) is substantially in the center of the exposure period.

14: In regards to Claim 17, Okada further teaches on Column 6, Lines 15-28 the correction means corrects the shake of the image by moving an image extraction range in a direction to cancel the movement of the image due to the shake. Okada teaches that the shake is corrected for by changing the readout start location in memory.

15: As for Claim 18, Hamada et al further teaches on Column 11, Lines 7-9 that the drive condition includes a shutter speed. Hamada teaches that the samples are extracted a multiple number of times depending on the exposure time which is viewed as the shutter speed.

16: In regards to Claim 19, Hamada et al teaches that the field period is a generation period of a video signal. Hamada et al specifically states that the samples are taken out during an exposure period.

17: As for Claim 20, Okada depicts in Figure 1 an image sensing apparatus for electronically applying shake correction to sensed image data, and outputting corrected image data, comprising: shake detection means (21A and 21B) for detecting a shake; Column 5, Lines 62-66 The shake detection means is viewed as the Pitch and Yaw angular velocity sensors. Okada teaches the use of sampling means in the form of an A/D converter (23a and 23B). Correction data calculation means (20) for calculating a shake correction data used in the shake correction by a predetermined calculation of the shake information signal selected by the selection means, and correction means for applying the shake correction to the sensed image data in accordance with the obtained shake correction data (20). Column 6, Lines 6-15 and Column 6, Lines 55-60.

Okada teaches the method of acquiring sampled data from the angular velocity sensors to correct for the movement of the camera in the image. However, Okada does not teach when the samples will be taken or sampling shake information detected by the shake detection means at a plurality of sampling timings within one field period of the image sensing apparatus (20). Or that the selecting means for selecting a shake information signal at one of a plurality of sampling timings, which corresponds to a drive condition of image sensing means at the time of image sensing.

Hamada et al teaches in Figure 11B and on Columns 10, Lines 54-67 and Column11, Lines 1-9 that it is advantageous to collect data to correct for the movement of the camera during an exposure period. Furthermore, Hamada et al teaches that data can be extracted multiple times during an exposure period in accordance with the shutter speed. Column 11, Lines 7-9. This method is advantageous because it gives a more accurate calculation for the required motion correction due to the fact that the correction value is calculated using data during the actual exposure. Hamada et al depicts in Figure 14A and teaches on Column 12, Lines 36-48 that the sampling means samples the shake information used for calculating the shake correction data to be supplied to the correction means at a timing corresponding to a substantially central time of a storage time period of the image sensing means. Hamada et al teaches that the storage time is the interval when the shutter is open. It is clear from Figure 14A that the sampling time which corresponds to the line (M) is substantially in the center of the exposure period.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to acquire the sampled shake information used to correct for shake in the camera of Okada a multiple number of times during an exposure in accordance with the current

shutter speed as taught be Hamada et al in order to give a more accurate calculation for the required motion correction.

Okada in view of Hamada et al does not teach that the multiple samples are taken during one field period of the image sensing apparatus (20), However Hamada et al states that multiple samples are taken during one exposure period.

Takei et al depicts in Figure 6 and on Column 1, Lines 26-35 and Column 8, Lines 3-11 that it is advantageous to have the exposure period be less than one field period to enable a video tape recorder to reproduce a clear picture without shaking of the images from scenes of rapidly moving objects recorded on the tape.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to make the exposure time of Okada in view of Hamada et al less than one field period to enable a video tape recorder to reproduce a clear picture without shaking of the images from scenes of rapidly moving objects recorded on the tape. Therefore, because one exposure period is entirely within one field period and Hamada et al teaches sampling the shake information a multiple number of times during one exposure period. Okada in view of Hamada et al in further view of Takei et al teaches that a multiple number of samples are taken during one field period.

18: In regards to Claim 21, Claim 21 is rejected for reasons related to Claim 20. Furthermore, it is inherent in the design of the video camera of Okada in view of Hamada et al that it have a storage medium to store the program to control the camera and execute shake correction.

Allowable Subject Matter

19: Claims 2, and 5-7 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

20: The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. USPN 5,585,875 Imafuji et al teaches a method of a camera having an anti-vibration function; USPN 6,173,121 Tomita et al teaches a camera that has motion compensation detection; US 2001/0012059 Kudo teaches the use of a camera with image motion correction and detection circuitry; USPN 5,237,365 Miyazawa teaches the use of a camera with a shake correcting device; USPN 5,905,848 Yano et al teaches the use of an image pickup apparatus with vibration compensation; US 2003/0035053 Kyuma et al teaches the use of an image pickup apparatus that can correct for the shake of a camera; USPN 6,501,503 Kudo teaches a camera that can correct for the motion of an image; USPN 5,990,942 Ogino teaches a camera that uses image information to correct for blur; USPN 5,978,599 Wakabayashi et al teaches a camera having a vibration correction function.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to James M Hannett whose telephone number is 703-305-7880. The examiner can normally be reached on 8:00 am to 5:00 pm M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wendy Garber can be reached on 703-305-4929. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9314 for regular communications and 703-842-9314 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to customer service whose telephone number is 703-308-6789.

James Hannett
Examiner
Art Unit 2612

JMH
May 6, 2003

WENDY R. GARBER
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600